Table 20.
Projected Net Unreclaimed Drilling Related Disturbance for All New Wells Minus Abandonments of Newly Drilled Wells and of Old Wells for the Next 20 Years

NET DISTURBANCE PROJECTIONS - FOR ALL WELLS MINUS ABANDONMENTS OF NEWLY DRILLED WELLS AND OF OLD WELLS (based on figures supplied by RMG 11/14/03 - updated 11-18-03)
Unconstrained RFD values: CBM - 4832 wells and Conventional - 4477 wells. All alternatives reflect restrictions that reduce the unconstrained well numbers.

ALTERNATIVE 1 - NO ACTION

RMG Projections	CBM	4832-181=	4651	3.7% reduction
	CONVENTIONAL	4477-183=	4294	4.1% reduction
	TOTAL WELLS		8945	

				Disturbance			
	New Wells Added [j]	New Wells Abandoned [h]	Net Wells Added	Each Well and Road (acres)	Total Well and Roads (acres)	Roads Only (acres)	Added Pipeline Activity [g] (acres)
Shallow CBM [a]	4170	667	3503	0.91	3187	3152	490
Deep CBM [b]	481	77	404	2.1	849	647	57
Dual CBM [m]							
Intermediate Gas [c]	3400	1040	2360	2.4	5663	3775	708
Dual Intermed Gas [n]							
Intermediate Exploratory [d]	336	34	303	5.5	1664	1422	272
Deep Gas [e]	508	51	457	6.1	2789	2149	411
Deep Exploratory [f]	50	5	45	15.6	705	642	123
TOTALS	8945	1874	7071		14858	11788	2062

Average acreage disturbed per well 2 **Total Acres Disturbed= 14858**
% of ALT 2= 0.97

ALTERNATIVE 2 - DEVELOPMENT EMPHASIS

RMG Projections	CBM	4832-54=	4779	1.1% reduction
	CONVENTIONAL	4477-59=	4419	1.3% reduction
	TOTAL WELLS		9198	

				Disturbance			
	New Wells Added [j]	New Wells Abandoned [h]	Net Wells Added	Each Well and Road (acres)	Total Well and Roads (acres)	Roads Only (acres)	Added Pipeline Activity [g] (acres)
Shallow CBM [a]	4284	686	3599	0.91	3275	3239	504
Deep CBM [b]	495	79	415	2.1	872	665	58
Dual CBM [m]							
Intermediate Gas [c]	3499	1050	2449	2.4	5877	3918	735
Dual Intermed Gas [n]							
Intermediate Exploratory [d]	346	35	311	5.5	1713	1464	280
Deep Gas [e]	523	52	470	6.1	2870	2211	423
Deep Exploratory [f]	52	5	47	15.6	726	661	127
TOTALS	9198	1907	7291		15333	12157	2127

Average acreage disturbed per well 2 **Total Acres Disturbed= 15333**

ALTERNATIVE 3 - PROTECTION/CONSERVATION EMPHASIS

RMG Projections	CBM	4832-368=	4464	7.6% reduction
	CONVENTIONAL	4477-309=	4168	6.9% reduction
	TOTAL WELLS		8632	

				Disturbance			
	New Wells Added [j]	New Wells Abandoned [h]	Net Wells Added	Each Well and Road (acres)	Total Well and Roads (acres)	Roads Only (acres)	Added Pipeline Activity [g] (acres)
Shallow CBM [a]	3984	637	3347	0.91	3045	3012	469
Deep CBM [b]	458	73	385	2.1	808	615	54
Dual CBM [mp]	22	4	18	0.02	0		
Intermediate Gas [c]	2838	984	1854	2.4	4450	2966	556
Dual Intermed Gas [nl]	462	46	416	1.2	499		
Intermediate Exploratory [d]	326	33	294	5.5	1615	1380	264
Deep Gas [e]	493	49	444	6.1	2707	2086	399
Deep Exploratory [f]	49	5	44	15.6	685	623	119
TOTALS	8632	1831	6801		13809	10683	1862

Average acreage disturbed per well 2 **Total Acres Disturbed= 13809**
% of ALT 2= 0.90

ALTERNATIVE 4 - PREFERRED ACTION

RMG Projections	CBM	4832-269=	4563	5.6% reduction
	CONVENTIONAL	4477-218=	4259	4.9% reduction
	TOTAL WELLS		8822	

				Disturbance			
	New Wells Added [j]	New Wells Abandoned [h]	Net Wells Added	Each Well and Road (acres)	Total Well and Roads (acres)	Roads Only (acres)	Added Pipeline Activity [g] (acres)
Shallow CBM [a]	4073	652	3421	0.91	3113	3079	479
Deep CBM [b]	468	75	393	2.1	826	629	55
Dual CBM [m]	22	4	18	0.08	2		
Intermediate Gas [c]	2910	991	1919	2.4	4605	3070	576
Dual Intermed Gas [n]	462	74	388	0.28	129		
Intermediate Exploratory [d]	333	33	300	5.5	1651	1411	270
Deep Gas [e]	504	50	453	6.1	2766	2131	408
Deep Exploratory [f]	50	5	45	15.6	700	637	122
TOTALS	8822	1884	6938		13792	10957	1910

Average acreage disturbed per well 2 **Total Acres Disturbed= 13792**
% of ALT 2= 0.90

[a] Shallow CBM wells are estimated to be 4832[j] wells less 500 deep CBM wells with a 16% abandonment rate

[b] Deep CBM wells are estimated to be 500 of the total CBM wells with a 16% abandonment rate.

[c] 87% of the estimated 4477[j] conventional gas wells are Intermediate Gas and abandon at a rate of 10% per year.

[d] 9% of the above intermediate conventional wells are exploratory and abandoned at a rate of 10% per year

[e] 13% of the estimated 4477[j] conventional gas wells are Deep Gas and abandon at a rate of 10% per year.

[f] 9% of the above Deep Gas wells are exploratory and abandoned at a rate of 10% per year

[g] Pipeline disturbance is considered to be mitigated within 4 years after the pipeline is installed. This calculation is new pipelines disturbance that equils 4 years times the number of wells per year times the respective disturbance factor.

[h] Wells abandon are at a rate of 16% for CBM and 10% for conventional and deep gas, plus 35 wells per year of old wells which are lumped into the intermediate gas category

[j] Reservoir Management Group estimates of total wells as adjusted February, 2003

[m] Dual CBM wells are two wells drilled from the same pad and disturbance figure reflects only an increase in the well pad size It is estimated that 2.5% of Alternative 3 wells will be drilled in this manner and is reflected in proportionate reduction of both shallow and deep CBM wells.

[n] Dual Intermed Gas are two wells drilled from the same pad and disturbance figures reflects only an increase in well pad size It is estimated that 27% of Alternative 3 and Alternative 4 wells will be drilled in this manner and is reflected in an equal reduction of Intermediate Gas wells.

[p] Considers that only Federal wells can be controlled and required to drill a directional well to limit surface disturbance. Federal wells are estimated to be 45.1% of total wells. Value obtained from Alternative Gross Disturbance Tables.

Tables modified from Chism (2004)